

Brazil-India Technology, Employment and Regional Inequality (TERI) Project

The Technology, Employment and Regional Inequality (TERI) Project is being carried out by the Technological Change and Urban Social Policy (TCUSP) Research Unit at Columbia University.

Very little detail is known about how investments and industrial policy options exercised by the national and regional State within large economies such as Brazil and India are affecting industrial employment and regional socio-economic development. The Columbia University Technology, Employment and Regional Inequality (TERI) Project is a comparative analysis of technological and industrial policy choices and their impact on intersectoral and regional employment inequalities observed both in India and Brazil. We investigate if and how investments in mid- and high-tech sectors - a variable perceived as important in explaining economic growth- might be related to socio-economic inequality and regional indicators. We study how the industrial policy-employment-inequality link might be influenced by institutions for education, training, and health. These include capturing through industrial sector analyses the changing role(s) of the State and pressures on public institutions in both countries. The outcomes of the project will determine if and under what conditions the approaches developed here can be utilized to study other country contexts.

Outline of the TERI Project

As the state has committed to increasing the resources used in the manufacture of higher-value added, technology-intensive goods, generating new products and processes that increase productivity and create high wage jobs, the guiding questions for our project are:

- Are these industrial policies increasing or decreasing inequalities?
- Under what conditions have they contributed to a rise (or not) in employment rates?
- What is the specific nature of the technology-employment relationship in the sectors, and what institutions mediate this relationship?
- What is the type and extent of informality in the nature of employment, especially in employment inequalities within, and between sectors?
- What is the impact of these policies in any one sector on other industrial manufacturing and services sectors?
- How is the State changing its several involvements in industrial policy? What are the implications of this for social policies and labour markets?

An important additional goal of the TERI Project is to qualitatively and quantitatively establish appropriate metrics associated with economic, particularly employment inequalities of several kinds, including the nature and changes within the industrial component of the informal economy. We augment our analysis with regional indicators

and qualitative sectoral case analyses to understand the specific employment and social policy context that supports or thwarts industrial policies. The point is that when a region targets a particular industry for development; it is choosing to increase jobs in a particular part of the wage distribution. As a result, advanced sectors will demand skilled labor while backward sectors tend to absorb unskilled workers. A data set with employment and wage gap is a good source to measure the extent of intersectoral inequalities within a region. More specifically, we want to examine the level of employment/wage dispersion and concentration among high, middle and low tech sectors. Since most of these studies have looked at economic growth and wage inequality at macro levels, these specificities are lost by aggregation of data and hide the regional variations and their specific sectoral dynamics.

The Theil Index has been employed in some recent studies to measure industry concentration using municipality level employment /wage data at the state level from 1970 onwards. The Theil Index allows measurement of the portion of overall wage inequality that is attributable to a particular industry group. A Theil Index analyses allows the region to see the effect of this change on wage inequality. The Theil Index captures the same information that the Gini Coefficient would if applied to wages but in addition provides information on the contribution of each group to the total level of wage inequality in the population. Our analysis constructs data sets that might be useful to study informal workers and wage distributions, but also includes detailed sectoral analyses that most existing studies exclude. We wish to extend analyses of the organized manufacturing sector from UT Austin, and others elsewhere working on Science, Technology, Innovation and inequality. By focusing on employment, we situate inequality within the framework of industrial labor market institutions and thus are able to question under what conditions labor market entitlements, education and health might require reform. Besides the Theil index, we also assess alternative techniques for measurement. The initial qualitative and quantitative work will focus on Karnataka state, in S. India, and Sao Paulo in Brazil.

The research will be based on quantitative analysis of representative data -sets relevant to the two countries such as UNIDO, ASI, NSSO, IBGE, SEADE DIEESE. The TERI Project should contribute to an interface between quantitative assessment and “thick” socio-economic understanding to produce evaluations of employment and welfare implications of technological and industrial policy choices.

TERI lead researchers are Dr. Luciana Pereira, Senior Research Affiliate at TCUSP and Prof. Smita Srinivas, Director of TCUSP at Columbia University, and Assistant Professor of Urban Planning.

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